STATEMENT OF BASIS/FINAL DECISION AND RESPONSE TO COMMENTS SUMMARY

REGION V
ID# 7364

Safety-Kleen Corporation
Recycle Center Facility
Hebron, OH
(Signature Date: May 26, 1998)

Facility/Unit Type:	**Solvent Reclamation and Recycling Plant**
Contaminants:	**1, 2 - Dichloroethylene (DCE), Methylene Chloride, Tetrachloroethylene (PCE), 1, 1, 1 - Trichloroethane (TCA), Trichloroethylene (TCE), Mineral Spirits**
Media:	**Groundwater, Soil, Surface Water, and Sediment**
Remedy:	**Remediate the contaminated groundwater by containment and air stripper treatment. Cap contaminated soils with asphalt and remove Volatile Organic Compounds (VOCs) by the Soil Vapor Extraction (SVE) Method.**

FACILITY DESCRIPTION

The Safety-Kleen Corporation (SK) Recycle Center facility is located at 581 Milliken Drive, SE, Hebron, Ohio. The facility is situated on the northeastern corner of the Newark Industrial Park, bordered on the west and south by light industry and to the north and east by the South Fork of the Licking River. The area surrounding SK is predominantly rural with a low population. The closest residence is approximately 1000 feet to the north of the facility.

SK has operated its facility as a solvent reclamation and recycling plant since July 1981. The facility receives spent mineral spirits (Stoddard solvent); dry cleaning process wastes consisting of tetrachloroethylene (PCE) residues, mineral spirits, and freon; solvents consisting of a mixture of mineral spirits and chlorinated solvents; and mineral spirits dumpster mud from SK service centers. The facility also receives spent solvents consisting of 1,1,1- trichloroethane (1,1,1-TCA) ; trichloroethylene (TCE) ; PCE; and methylene choride from industrial users.

The spent solvents are stored and reclaimed using distillation and fractionating process equipment. Dry cleaning process wastes, spent industrial solvents, and mineral spirits dumpster mud are brought to the facility and the solvents are recovered for reuse through the Safety-Therm process. The solid residues generated during the recycling process are transported off site for proper disposal.

On November 27, 1985 a fire occurred in the Aboveground Storage Tank farm, which formally existed east of well H-11S at the Wastewater Treatment Plant (WWTP) site. As a result, an unknown quantity of solvents were released into soil, surface water, and

groundwater. No groundwater impacts have been detected north of the South Fork of the Licking River, but nonaqueous-phase liquids have been detected beneath the facility.

On March 16, 1989, the U.S. Environmental Protection Agency (EPA) and SK signed an administrative order on consent. The consent order required SK to assess the nature of the contamination, evaluate remedial alternatives, and implement the remedy selected by the EPA. The facility initially conducted a RCRA Facility Investigation (RFI) in December 1991 which included extensive groundwater, soil and surface water sampling.

The RFI sampling activities identified the following chemicals of potential concern (COPC):

- 1,2-Dichloroethylene (DCE);
- Methylene Chloride;
- Tetrachloroethylene (PCE);
- 1,1,1-Trichloroethane (TCA);
- Trichloroethylene (TCE); and
- Mineral Spirits.

COPCs were identified in on-site soils; off-site soils adjacent to the facility; groundwater in the north portion of the facility; and surface water and sediments in the South Fork of the Licking River and the oxbow channel.

The sampling results indicated contamination problems that required Interim Corrective Measures (ICM) which SK voluntarily implemented. Measures were taken to contain groundwater and evaluate methods to reduce volatile organic compounds (VOC) concentrations in unsaturated soils in the west yard area, before completion of the Corrective Measures Study (CMS).

EXPOSURE PATHWAYS

The potential exposure pathways for human health and the environment are primarily through soil and soil gas. VOCs in soil gas could be released and contaminate outdoor and indoor air. Potential releases, ingestion, and dermal contact with subsurface soil could occur from digging during construction.

An Environmental Risk Assessment (ERA) was performed to ensure overall protection of the environment from the contaminants released by the facility. The specific area of concern focused on fish and invertebrates and their possible exposure (through adsorption, ingestion or consumption) to COPC contaminants. No surface water COPC concentrations exceeded the available water quality criteria. There are no sediment criteria for the COPCs. Because the COPC concentrations are below EPA established or recommended criteria, no Risk Based Cleanup Levels (RBCLs) were developed specifically for the protection of aquatic organisms.

SELECTED REMEDY

Only one remedial alternative was developed, mainly because many process options were evaluated and screened out during the ICM. The remedy selected incorporates the ICM already implemented at the facility.

The main goal of the groundwater remediation effort is to keep the groundwater contamination contained on the SK property, precluding additional remedial actions. The main goal of the soil remediation effort is to acheive established RBCLs by using a Soil Vapor Extraction (SVE) system. The components of the proposed remedy for groundwater and soil contamination are described below.

Groundwater cleanup efforts include:

- The containment of groundwater by extending the existing sheet-pile wall. The sheet-pile wall extension would be anchored in the silty clay located 18 to 22 feet below the shallow, sandy zone.

- In addition to containment, groundwater extraction would be implemented to prevent the buildup of hydrostatic pressure on the upgradient side of the wall and to collect the contaminated groundwater for treatment before its discharge.

- Groundwater extracted using the installed recovery wells would then be treated using air stripping. Air stripping involves contact of the affected water with air, allowing VOCs to be transferred from the water phase directly to the atmosphere or, if necessary, to an off-gas treatment system. The treated groundwater would be discharged to the Hebron Waste Water Treatment Plant (WWTP).

Unsaturated soils cleanup efforts include:

- Soils will be contained using an asphalt cap to minimize or eliminate infiltration of surface water that could react with COPCs in the unsaturated soils and cause further contamination of the groundwater. A SVE system would be installed in the west yard area. The SVE system would apply a vacuum to the unsaturated soils and extract vapor containing COPCs from the soil pores. The off-gas from the SVE system would then be discharged to the atmosphere. Groundwater monitoring and soil sampling would be conducted to confirm that contaminant levels are being reduced to soil RBCLs.

EPA based its remedy selection on the four general standards for corrective measures in the RCRA statutory requirements and the five remedy decision factors in the proposed Subpart S regulation for corrective action. The following standards and factors were used to evaluate the proposed remedy:

- Overall protection of human health and the environment;
- Attainment of media cleanup standards;
- Controlling the source of releases;
- Compliance with waste management standards;
- Reduction of toxicity, mobility, or volume of contaminants through treatment;
- Long-term reliability and effectiveness;
- Short-term effectiveness;
- Implementability; and
- Cost.

The proposed remedy provides overall protection of human health and the environment. Groundwater and soils would be contained to prevent direct and indirect human contact with these contaminated media. Proper measures will be implemented to treat and discharge contaminated groundwater. Based on the information currently available, the proposed remedy provides the best balance of advantages and disadvantages with respect to the evaluation criteria.

The costs associated with the proposed remedy are estimated by SK to be low (less than $0.1 million.) Monitoring well and SVE installation costs require the greatest capital expenditures. Annual operation and maintenance (O&M) costs are estimated by SK to be moderate ($0.1 to $0.5 million) and would depend on the efficiency of the air stripping and SVE treatment systems.

CONTAMINATION DETECTED AND CLEANUP GOALS

Media	Estimated Volume of Contaminated Media	Contaminant	Maximum Concentration [Liquids (µg/L); Solids (mg/kg)]	MCL Action Level (mg/kg)	MCL Cleanup Goal [Liquids (µg/L); Solids (mg/kg)]**	Point of Compliance
Groundwater	*	1, 2-DCE	29,000	*	80	*
		PCE	3,300	*	1.4	
		1,1,1-TCA	4,200	*	1,550	
		TCE	2,900	*	2.6	
		Mineral Spirits	160	*	3,260	
					160	
Soil	*	1, 2-DCE	8.4	*	66	*
		Methylene Chloride	11	*	0.9	
					5.6	
		PCE	280	*	3,260	
		1,1,1-TCA	27	*	2.6	
		TCE	270	*	2,010	
		Mineral Spirits	200	*		
Surface Water	*	1,2-DCE	18	*	*	*
		PCE	3	*	*	
Sediment	*	1, 2-DCE	29	*	*	*
		Methylene Chloride	0.005	*	*	
		PCE	0.46	*	*	
		TCE	0.036	*	*	
		Mineral Spirits	640	*	*	

* Information not provided

** Risk-Based Cleanup Levels (RBCL) were used instead of Maximum Contaminant Level (MCL) Cleanup Goals

INNOVATIVE TECHNOLOGIES CONSIDERED

None.

PUBLIC PARTICIPATION

EPA conducted a formal public comment period on the proposed corrective action remedy from January 21, 1998 - March 9, 1998. There was only one public comment received from a private citizen who was in favor of the proposed remedy, but voiced her concern over the length of the cleanup time. The supporting Administrative Record is available at the Newark Public Library. The Ohio Environmental Protection Agency (OEPA) public noticed the Part B Permit on April 10, 1998, and the public comment period ended on May 25, 1998.

NEXT STEPS

EPA will terminate the March 16, 1989 Administrative Order on Consent and OEPA will assume primacy over the corrective measures implementation at the facility.

KEY WORDS:
soil, groundwater; inhalation, ingestion, dermal contact; 1, 2 - Dichloroethylene (DCE), methylene chloride, Tetrachloroethylene (PCE), 1,1,1 - Trichloroethane (TCA), Trichloroethylene (TCE), mineral spirits; soil vapor extraction, air stripping; reclamation.

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